



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,903	05/03/2007	Eva Witt	47113-5090	5061
55694 7590 01/04/2010 DRINKER BIDDLE & REATH (DC) 1500 K STREET, N.W. SUITE 1100 WASHINGTON, DC 20005-1209				
EXAMINER				
YEE, DEBORAH				
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
01/04/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/584,903

Applicant(s)

WITT ET AL.

Examiner

Deborah Yee

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 to 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 to 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- _____ Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- _____ Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The replacement drawing was received on December 1, 2009. This drawing is acceptable.

Response to Arguments

2. Applicant's arguments filed December 1, 2009, with respect to the rejection(s) of claim(s) 1-8 under 35 U.S.C 103(a) as being unpatentable over European patent 1235682 (Ralf), US Patent 4,535,034 of US Patent 4,752,599 (Nakamura) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of new prior art.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 to 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,585,864 (hereafter "Fisher") in view of US Patent 4,535,034 (hereafter "Zaizen") and further in view of US Patent 4,752,599 (hereafter "Nakamura").
5. Similar to present invention, Fisher in claim 1 discloses coating an stainless steel alloy substrate with at least one layer of an alloy of higher Al content (MCrAlX) by physical vapour deposition at a temperature range of about 200 to 1000°C and more

specifically in claim 5 by magnetron sputtering physical vapour deposition at a temperature in the range of about 200 to 500°C. In addition, Fisher deposits a continuous diffusion coating onto the stainless substrate beneath the overlay coating comprising 35-45%Al and 5 to 20%Cr or Ti and 40 to 55% Si at 400 to 600°C in claims 6 and 7; and optionally depositing an Al or Al alloy layer onto the overlay alloy coating by sputtering at 200 to 500°C in claim 10 and lines 39-50 in column 7.

6. Fisher on lines 15 to 34 of column 1 teaches a stainless steel substrate which includes austenitic alloy composition containing 18 to 42% Cr, 18 to 48% Ni and iron balance, and therefore suggest Applicant's austenitic substrate alloy composition comprising 15 to 27%Cr and 20 to 70% Ni in claim 2. In addition, Fisher uses austenitic steel alloy in general which would include low-Al austenitic steel alloys known in the metallurgical art such as taught by Zaizen and therefore satisfy an austenitic substrate alloy containing low Al content recited by present invention claim 1.

7. Fisher teaches coating with an Al alloy or Al that meets claims 3 and 4. In addition, Fisher teaches an Al alloy, in general, which would include Al alloy containing 0.5 to 25% Si as recited by claim 5 since such Al alloy compositions are known in the art and conventionally used as coating for heat resistance, see Nakamura, lines 4 to 7 in column 7.

8. Fisher does not teach the resultant alloy containing 4.5 to 12%Al and preferably 5.5 to 12%Al as recited by the claims but such property would be expected since composition and process of making are closely met and in absence of evidence to the contrary. Also, it would be obvious and a matter of routine optimization to adjust the Al

content to achieve the desired heat resistant properties sought which is well within the skill of the artisan and productive of no new and unexpected results.

9. Fisher on lines 7 to 47 in column 1 uses alloy as components for high temperature corrosive application which would include catalytic converter or resistive heater as recited by one or more of the dependent claims.
10. Claims 1 to 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,693,368 (hereafter "Ackerman") in view of US Patent 6,730,264 (hereafter "Chao") and further in view of US Patent 4,752,599 (hereafter "Nakamura").
11. Similar to present invention, Ackerman in claims 1 to 10 discloses coating an iron- based or nickel-based alloy substrate with aluminum at a temperature range of about 280 to 420°C by vapor deposition.
12. Ackerman on lines 10 to 22 of column 3 teaches an iron or nickel alloy substrate which includes Inconel 718. According to Cao in columns 1-2, Inconel 718 is an austenitic super alloy having a composition containing 17 to 21% Cr, 2.8 to 3.3% Mo, 0.2 to 0.8% Al, 50 to 55% Ni and iron balance which would suggest Applicant's austenitic substrate alloy composition comprising 15 to 27%Cr, 0 to 4% Mo, 0 to 5% Al and 20 to 70% Ni in claim 2.
13. Ackerman teaches coating with Al and therefore satisfies claims 3 and 4. Even though Ackerman does not teach using Al alloys containing 0.5 to 25% Si as recited by claim 5 such difference would not be a patentable distinction. Note Al alloy compositions containing Si are known in the art and conventionally used as coating for heat

resistance, see Nakamura, lines 4 to 7 in column 7; and hence would be a matter of choice well within the skill of the artisan to incorporate.

14. Ackerman does not teach the resultant alloy containing 4.5 to 12%Al and preferably 5.5 to 12%Al as recited by the claims but such property would be expected since composition and process of making are closely met and in absence of evidence to the contrary. Also, it would be obvious and a matter of routine optimization to adjust the Al content to achieve the desired heat resistant properties sought which is well within the skill of the artisan and productive of no new and unexpected results.

15. Ackerman on lines 10 to 30 in column 3 uses alloy as components for high temperature corrosive application, which would include catalytic converter or resistive heater as recited by one or more of the dependent claims.

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/
Primary Examiner
Art Unit 1793

/DY/